

where the soil continued too wet from previous heavy rains, preparations for spring work made good progress in most areas during the last decade, and seasonal operations were well advanced in the Atlantic Coast States, the South, and the Great Plains, with some potatoes put in as far north as Long Island and considerable oats seeded northward to southern Nebraska.

*Small grains.*—In the western Wheat Belt rain and melting snow furnished abundant moisture during the first part of the month and the crop made satisfactory progress generally, except in some west-central Plains sections. Some late-sown grain was in poor condition locally in the Ohio Valley, but rains and snows during the second week were favorable over the Great Plains region, while cereal crops made good advance in the South. Winter grains made material growth during the last decade and soil conditions were very satisfactory, due to abundant precipitation. In parts of the Ohio Valley, however, the soil on lowlands had been too wet and there was some local complaint of yellowing. Oat seeding made slow advance in the central valleys, due to wet soil, but considerable oats had been seeded to southern Nebraska at the close of the month.

*Ranges, pastures, and livestock.*—Pastures made good progress in the South during the month, and at its close grass was greening to the central portions of the country. Livestock continued to range freely over the northern Great Plains, with a consequent saving of feed. Precipitation over western grazing districts was very beneficial for the range, but caused some suffering of livestock during the last half. The weather was mostly favorable for lambing the latter part of the month, but previous conditions had caused some suffering.

*Miscellaneous crops.*—The frost that overspread the Southeast early in the month caused considerable damage to truck in Georgia and slighter injury elsewhere; protective measures saved a large acreage of truck in Florida. Potato planting advanced fairly well during the month and at the close was beginning on Long Island.

Although considerable injury to fruit was first reported, the harm, in general, was rather less than at first indicated. Fruit continued to advance considerably ahead of an average season, with early varieties blooming to the lower Ohio Valley, but the cooler weather the latter part of the month was favorable in checking too rapid progress.

## WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

### NORTH ATLANTIC OCEAN

By F. A. YOUNG

March was an unusually stormy month over the greater part of the North Atlantic. Over the steamer lanes the excess of days with heavy weather was not confined to any particular region, but the number of days with gales was above the normal along nearly the entire route from New York to the British Isles, although the weather over the eastern part of the southern lane was somewhat less turbulent. Many of the disturbances were very severe, and winds of force 11 and 12 were not uncommon, as shown by storm reports in the table.

Fog was unusually prevalent along the American coast between Hatteras and Nova Scotia, where it was reported on from 8 to 12 days. The number of days with fog over the Grand Banks was considerably below the normal; it was observed on 3 days in the Gulf of Mexico, on 5 days in the square between the fortieth and forty-fifth parallels and the twentieth and twenty-fifth meridians, and on from 1 to 3 days in the vicinity of the British Isles, while the greater part of the steamer lanes was practically clear.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian), North Atlantic Ocean, March, 1927

Stations	Average pressure	Departure <sup>1</sup>	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>		<i>ches</i>	
Julianshaab, Greenland.....	29.42	( <sup>2</sup> )	29.93	9th.....	28.87	22d.
Belle Isle, Newfoundland.....	29.83	+0.03	30.30	25th.....	29.20	16th.
Halifax.....	30.05	+0.15	30.50	11th.....	29.82	9th.
Nantucket.....	30.08	+0.08	30.52	12th.....	29.56	8th.
Hatteras.....	30.13	+0.10	30.42	5th.....	29.22	2d.
Key West.....	30.10	+0.07	30.30	5th.....	29.04	22d. <sup>4</sup>
New Orleans.....	30.12	+0.09	30.42	3d.....	29.92	9th.
Swan Island.....	29.94	-0.04	30.08	5th.....	29.88	13th. <sup>4</sup>
Turks Island.....	30.12	+0.10	30.22	5th.....	30.00	3d.
Bermuda.....	30.15	+0.12	30.42	13th.....	29.56	3d.
Horta, Azores.....	30.21	+0.09	30.64	4th.....	29.80	19th.
Lerwick, Shetland Islands.....	29.58	-0.12	30.34	13th.....	29.00	7th.
Valencia, Ireland.....	29.65	-0.25	30.30	12th.....	28.59	25th.
London.....	29.96	-0.22	30.36	15th.....	28.87	25th.

<sup>1</sup> From normals shown on H. O. Pilot Chart based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian.

<sup>2</sup> Mean of 22 observations; 9 days missing.

<sup>3</sup> No normal established.

<sup>4</sup> And on other dates.

On the 1st there was a shallow depression in the Gulf of Mexico that afterward developed into a severe disturbance as it moved northeastward along the American coast, as shown by Charts VIII to XI, that cover the period from the 2d to 5th, inclusive. These charts also give an idea of the disturbance over the eastern section of the ocean that was especially well developed on the 3d and 4th.

From the 6th to 14th there were few well-defined disturbances of any great extent or intensity, although during this period a number of vessels in various parts of the ocean reported gales, while moderate weather prevailed over large areas.

On the 15th an area of low pressure was over Newfoundland, and a second Low central near 50° N., 25° W. On the 16th the center of the western Low was near St. Johns, Newfoundland, and the eastern near 46° N., 18° W.; they had both increased in intensity, and westerly winds of force 9 to 11 prevailed over the region between the fortieth and sixtieth meridians, north of the fortieth parallel, while moderate to strong gales were also encountered east of the twentieth meridian. By the 17th the western Low was central near 47° N., 37° W., and the storm area extended from the thirty-fifth to the fiftieth parallel and the thirtieth to the fiftieth meridian. The eastern Low of the 16th had apparently moved eastward, gradually filling in, as on the 17th moderate weather prevailed east of the thirtieth meridian.

On the 18th the conditions were much the same as on the previous day although the storm area was somewhat less in extent.

On the 20th a depression of limited area was central near 44° N., and 40° W.; this moved slowly eastward, and on the 27th was off the north coast of Scotland. During this period gales were prevalent over the middle and eastern sections of the steamer lanes, the storm area varying from day to day in extent and intensity.

On the 24th a slight depression was in the vicinity of Bermuda; it moved northward, increasing in intensity, and on the 25th, when central near 37° N., 68° W.,

strong gales swept the region between the thirty-fifth and forty-fifth parallels, west of the sixtieth meridian.

On the 26th and 27th the storm area extended as far east as the forty-fifth meridian, the disturbance reaching its greatest intensity on the 26th.

On the 28th and 29th the central portion of the steamer lanes was covered by a Low, and westerly winds of force 7 to 10 occurred over the southerly quadrants.

A slight depression, that on the 29th was central near 37° N., 57° W., moved eastward, and on the 31st was near 40° N., 50° W. During this period winds of force 7 to 9 prevailed near the center of the low.

NOTE.—Lieut. E. H. Kincaid, United States Navy, while on board the U. S. S. *Kittery*, near 30° N., 70° W., on March 28, observed a heavy hail squall.

## OCEAN GALES AND STORMS MARCH, 1927

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Jomar, Am. S. S.	Pasajes, Spain	Pensacola	25 51 N.	83 04 W.	Mar. 1	10 p., 1	Mar. 3	29.94	WSW.	WSW., 7.	N.	8.	WSW.-WNW.
Steel Navigator, Am. S. S.	New York	Colon	36 07 N.	74 07 W.	2	—, 2	3	28.92	NE	N., 12	NW	N., 12	E.-N.
Gallier, Belg. S. S.	Antwerp	New York	40 37 N.	70 05 W.	2	11 p., 2	3	29.43	NE	N., 11	N	NNE., 11	NE.-NNW.
Sac City, Am. S. S.	do.	do.	38 10 N.	39 45 W.	1	Noon, 2	2	29.64	S	SW., 12	NW	SW., 12	SW.-WNW.
Conte Rosso, Ital. S. S.	New York	Naples	39 50 N.	58 45 W.	3	4 a., 3	4	29.03	ENE	—, SSE	SSW	S., 11	Steady.
Iroquois, Br. S. S.	do.	London	45 20 N.	32 00 W.	3	11 p., 3	4	28.91	N	N., 10	NW	N., 11	N.-NNW.
Eglantine, Am. S. S.	Avonmouth	Boca Grande, Fla.	49 01 N.	11 25 W.	3	3 p., 3	5	29.46	SW	SW., 8.	NNW	—, 11	SW.-WSW.
Aral, Br. S. S.	River Tyne	New Orleans	49 48 N.	7 50 W.	2	4 a., 5	9	29.23	SSW	NW., —	NNW	WNW., 10	WSW.-NW.
Innoko, Am. S. S.	Rotterdam	New York	44 18 N.	50 03 W.	9	11 p., 9	10	29.57	SSE	SSE., 9	W	SSE., 9	Steady.
Elzasier, Belg. S. S.	Antwerp	do.	49 28 N.	13 30 W.	9	2 p., 9	10	29.97	NNW	NNW., —	NNW	NNW., 10	Steady.
Davision, Br. S. S.	Liverpool	Boston	46 30 N.	39 02 W.	12	4 p., 12	13	30.02	WNW	WNW., 9	NW	NW., 9	WNW.-NW.
Bolivian, Br. S. S.	do.	New Orleans	45 10 N.	22 00 W.	15	Mid't, 15	16	28.78	N	NW., 7	NW	NW., 12	N.-NW.
City of Weatherford, Am. S. S.	Rotterdam	do.	45 40 N.	15 00 W.	15	6 a., 16	16	29.06	SSE	SW., 10	WNW	—, 10	SSE.-WSW.
Elzasier, Belg. S. S.	Antwerp	New York	44 47 N.	42 25 W.	15	8 a., 17	18	28.97	SSW	W., —	WNW	WSW., 12	WSW.-NW.
West Arrow, Am. S. S.	Boston	Boston	43 32 N.	41 46 W.	19	1 p., 20	21	29.10	WSW	NW., 9	NW	NW., 11	SW.-NW.
Saco, Am. S. S.	Manchester	Mobile	49 10 N.	16 23 W.	20	3 p., 20	24	29.25	SW	WSW., 9	W	W., 10	S.-WSW.
Asuncion de Larrinaga, Br. S. S.	Liverpool	Habana	47 58 N.	23 16 W.	18	3 a., 21	25	29.06	S	WSW., 7	NW	NW., 10	W.-SW.
Mildrecht, Du. S. S.	Vigo	New York	45 20 N.	35 55 W.	23	8 a., 23	24	29.53	SW	SW., 8	NNW	NW., 10	SW.-W.
Arundo, Du. S. S.	Rotterdam	Gulport	48 08 N.	10 48 W.	22	9 a., 23	27	29.18	SW	WSW., —	NW	W., 10	Steady.
Colonian, Br. S. S.	Halifax	Fastnet	49 27 N.	33 02 W.	23	8 p., 24	25	29.43	WNW	WNW., 10	NNW	NNW., 10	Steady.
Ossa, Am. S. S.	Casablanca	New York	37 14 N.	68 53 W.	25	—, 25	26	29.08	N	N., 12	N	N., 12	N.-NNW.
Savoia, Ital. S. S.	Gibraltar	do.	38 30 N.	65 38 W.	25	5 p., 25	26	28.92	N	N., 11	N	N., 12	NNW.-N.
München, Ger. S. S.	Cobh	do.	51 06 N.	15 51 W.	24	4 a., 25	28	28.08	SSW	W., 10	NW	W., 12	W.-WNW.
E. M. Clark, Am. S. S.	Halifax	Canal Zone	36 33 N.	08 02 W.	24	7 a., 25	26	29.17	E	SSE., 7	NW	W., 11	Steady.
Conte Rosso, Ital. S. S.	Naples	New York	41 24 N.	51 45 W.	26	8 p., 26	27	29.33	S	S., 10	NNW	W., 10	Steady.
Albert Ballin, Ger. S. S.	Southampton	do.	48 13 N.	23 00 W.	29	Noon, 29	30	29.80	WSW	WSW., 9	W	WSW., 9	WSW.-W.
Chincha, Am. S. S.	Bordeaux	do.	37 00 N.	61 00 W.	30	4 a., 30	30	29.93	SW	SW., 6	NNE	NNE., 10	SW.-W.-NNE
Nieuw Amsterdam, Du. S. S.	Rotterdam	do.	49 45 N.	7 48 W.	31	7 p., 31	Apr. 1	29.61	SW	W., 10	NNW	NW., 10	Steady.
NORTH PACIFIC OCEAN													
Emp. of Russia, Br. S. S.	Yokohama	Victoria	46 26 N.	168 27 E.	1	4 a., 1	Mar. 1	28.74	SE	SE., 4	S	SSW., 9	SE.-S.-SW.
Do.	do.	do.	50 27 N.	140 44 W.	3	4 p., 4	5	29.25	SW	SW., 6	W	SW., 9	Steady.
Java Arrow, Am. S. S.	San Francisco	Balboa	14 30 N.	96 00 W.	2	4 p., 2	3	29.94	NE	NE., 7	NE	NE., 9	Steady.
Shidzuoka Maru, Jap. S. S.	Yokohama	Victoria	49 00 N.	160 00 W.	2	4 a., 4	5	28.55	E	SW., 5	WSW	E., 8	Steady.
Stanley, Am. S. S.	Honolulu	Kobe	32 08 N.	141 42 E.	4	7 p., 4	5	29.50	E	E., 7	NE	E., 10	Steady.
Unkai Maru, Jap. S. S.	Muroran	Portland	49 01 N.	146 47 W.	4	4 p., 4	6	29.09	S	SSW., 10	WSW	SSW., 10	S.-SSW.
Memphis City, Am. S. S.	San Pedro	Yokohama	32 44 N.	147 00 E.	5	2 p., 5	5	29.17	S	SSW., —	NW	NNW., 12	SSW.-NNW.
Oak Park, Am. S. S.	Honolulu	Kobe	30 34 N.	150 10 E.	5	4 p., 5	6	29.47	E	WSW., 8	NW	W., 9	SW.-W.
West Hixton, Am. S. S.	Shanghai	San Francisco	45 36 N.	173 41 E.	6	3 p., 7	7	28.92	E	NNE., 8	NW	NE., 9	ENE.-NNE.
Do.	do.	do.	46 50 N.	172 50 W.	9	2 p., 9	11	29.36	ESE	NNE., 8	NNW	NNW., 9	Steady.
Silvercedar, Br. S. S.	San Pedro	Yokohama	33 45 N.	142 15 E.	9	4 a., 11	11	29.25	S	SW., 11	NW	SW., 11	WSW.-W.
Harold Dollar, Br. S. S.	Karatsu	San Francisco	46 45 N.	144 30 W.	10	10 a., 10	11	29.27	S	SW., 10	WSW	SW., 10	Steady.
Stockton, Am. S. S.	Honolulu	San Pedro	29 30 N.	141 50 E.	11	9 a., 11	11	29.85	W	WNW., 8	NNW	WNW., 8	W.-WNW.
Do.	do.	do.	33 50 N.	152 34 E.	14	11 a., 14	14	29.63	WSW	N., 10	N	N., 10	WSW.-N.
Protesilaus, Br. S. S.	Yokohama	Victoria	37 30 N.	145 50 E.	11	3 p., 11	14	29.22	W	WNW., 8	NW	NW., 9	W.-NW.
Akagisan Maru, Jap. S. S.	do.	San Francisco	44 50 N.	167 15 W.	12	8 a., 13	13	29.51	SSE	S., 9	SE	S., 9	S.-SSW.
Grace Dollar, Am. S. S.	Manila	do.	41 37 N.	146 45 E.	12	Mid't, 12	13	29.27	WNW	NW., 7	NW	NW., 10	Steady.
Chickasaw City, Am. S. S.	Yokohama	Shanghai	43 40 N.	169 10 W.	16	—, 17	17	29.75	N	N., 7	N	N., 8	Steady.
Hakutatsu Maru, Jap. S. S.	Muroran	Portland	48 50 N.	150 37 W.	18	6 a., 18	18	29.46	SSW	SSW., 7	W	SW., 8	Steady.
Do.	do.	do.	48 06 N.	138 50 W.	20	4 a., 20	20	29.87	SW	SW., 7	W	SW., 9	Steady.
Lubrico, Am. S. S.	Baltimore	San Francisco	32 48 N.	119 40 W.	18	—, 18	19	29.94	NW	NW., —	NNW	NW., 9	NW.-NNW.
China Arrow, Am. S. S.	Surabaya	do.	43 10 N.	158 45 E.	20	6 p., 21	23	28.75	NE	SW., 5	W	WNW., 12	SSW.-W.
Las Vegas, Am. S. S.	Otaru	do.	42 25 N.	172 20 E.	21	—, 22	22	29.54	SE	S., —	W	—, 9	S.-SW.
City of Vancouver, Can. S. S.	Yokohama	Victoria	42 45 N.	158 56 E.	21	6 p., 21	22	28.61	SSE	WSW., 6	W	W., 11	S.-WNW.
Pres. Lincoln, Am. S. S.	San Francisco	Manila	47 30 N.	170 00 E.	21	5 a., 22	23	28.91	SSE	S., 10	SW	S., 11	SE.-SW.
Robert Dollar, Can. S. S.	Karatsu	San Francisco	49 05 N.	171 44 E.	25	8 a., 26	27	28.95	ENE	WNW., 8	NW	W., 10	Variable.
West Calera, Am. S. S.	Hongkong	do.	37 13 N.	147 00 E.	26	4 a., 27	27	29.16	SE	NW., 12	NW	NW., 12	NE.-NW.
Yuri Maru, Jap. S. S.	Milke	Portland	40 46 N.	152 22 E.	26	—, 27	27	28.89	S	S., 8	N	S., 8	S.-SW.
Makana, Am. S. S.	Ahukini	San Francisco	35 48 N.	129 45 W.	27	4 a., 28	29	29.90	NW	N., 9	NE	N., 9	NW.-N.
Tahchee, Br. S. S.	Shanghai	San Pedro	40 00 N.	167 30 W.	29	8 a., 29	29	29.89	NNE	NNE., 7	NNE	NNE., 8	Steady.
Walotapu, Br. S. S.	Newcastle	Vancouver	33 34 N.	148 30 W.	28	8 p., 28	30	29.56	SE	SE., 9	ESE	SE., 9	Steady.